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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/896,432
Filing Date: June 29, 2001
Appellant(s): CERNOCKY ET AL.

Rachael A. Stiegel
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/07/07 appealing from the Office action
mailed 8/10/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

WO 00/65195	Snider	04-1999
4,884,506	Guerreri	12-1989
3,351,012	Wilson	06-1966
3,735,705	Hudson Jr. et al.	05-1973
6,234,081 B1	Neyer	05-2001
5,090,321	Abouav	02-1992
5,295,544	Umphries	05-1994

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

- 1. Claims 1-5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Guerreri.**

In regards to claim 1 Snider discloses a detonation device (10) for selectively perforating a tubular (12) with a designated explosive charge (22) located down hole in a well bore (2), said device comprising;

the tubular (12);

the designated explosive charge (22) attached (page 9 lines 6-12) to the tubular (12); and a receiver (page 11, lines 14-15); whereby a transmitted signal detonates the respective explosive charge and thereby perforating the tubular .

In Figures 1 and 3 and page 8 lines 20-28, page 9 lines 6-12, 23-28, page 11 lines 14-15, and 19-21 and claims 39, 40, 42, 43 and 51

However, Snider does not expressly illustrate a wireless receiver, microprocessor and control means connected to said wireless receiver, an explosive bridge wire, high voltage supply means, and energy storage and trigger means, whereby a coded signal received by said wireless receiver is decoded by the micro processor and, if the code designates that the respective explosive charge is to be detonated, sends a signal to the trigger means which will supply high voltage to explosive bridge wire which will create sufficient energy to initiate detonation of the respective explosive charge.

Guerreri teaches a detonation device (10) for detonating an explosive charge comprising of a command unit (11), a translator unit (12), a control unit (13), which is comprised of a wireless receiver (61), a microprocessor and control means (62), a firing mechanism (63), which is comprised of an electric blasting cap (104) with an explosive bridge wire and an energy storage and triggering means (110), in figures 1-3 and 5 and column 3 lines 1-8, lines 11-26, and lines 30-51, column 4 lines 3-10 and lines 15-29, column 6 lines 57-68, and column 7 lines 1-14 and line 26.

Guerreri and Snider are analogous art because they both deal with detonation of remote explosive charges.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Guerreri's apparatus in order to achieve the

benefits of a wireless system (i.e. no cost for wires, no management of wires, portability, etc.) as well as the desired effect of producing a blasting system, which is comprised of a plurality of detonator assemblies that are individually detonated by a wireless remote command source. It is noted that Snider discloses any suitable control system may be used to ignite the explosive charges including electromagnetic wave transmissions (i.e. wireless), see for examples, page 9 lines 22-28, etc.

It is considered well within the level of knowledge of one of ordinary skill in the art to substitute a wireless detonation system for a non-wireless system with the associated microprocessors and other structures that make the system wireless.

Regarding the limitation an explosive bridge wire. Attention is directed to Guerreri column 6, lines 57-63, and column 8, lines 27-28 and 47-48 wherein Guerreri claims "a plurality of explosive charges, each of said charges having an electrically activated detonator." Appellant's specification page 10, lines 13-15 disclose that a high voltage is supplied to explosive bridge wire 42 to trigger detonation of the respective charges. It is the examiners position that the phrase "electrically activated detonator" in Guerreri reads on Appellants exploding bridge wire detonator, since an exploding bridgewire detonator is electrically activated. Additionally it is noted that Guerreri clearly states that "the firing mechanism itself is of conventional type" (See column 6, line 57). If Appellant is of the opinion that an exploding wire detonator is not a conventional type of firing mechanism or

electrically activated, then attention is directed to either column 1, lines 27-35 of U.S Patent 3,351,012 to Wilson or column 1, lines 8-15 of U.S. Patent 3,735,705 to Hudson, Jr. et al. wherein both references are only cited to show it is notoriously old and well known that explosive bridgewire initiators are indeed a conventional type of electrically activated firing mechanism commonly used for many years, hence it is inherent that Guerreri comprises an explosive bridge wire or in any event it would have been obvious to utilize such. (Reproduced from pages 4-5, section 2 of the 8/10/2005 Final Office action)

In regards to claims 2-4, Guerreri clearly illustrates a coded wireless signal that allows selective detonation of a plurality of explosive charges individually, in sequence, and in any desired pattern in figures 2, 3, 4, and 4a and column 3 lines 45-51, column 4 lines 30-66, column 5 lines 1-41 and lines 50-64, column 6 lines 5-9, lines 12-24, and lines 40-56.

In regards to claim 5, Guerreri clearly illustrates that the coded wireless signal does not transmit the power that is required to detonate the explosive charges, as identified in the rejections of corresponding parts of claims 2-4 above.

In regards to claim 7, Guerreri clearly illustrates that said microprocessor includes a digital signal processing logic, as identified in the rejections of corresponding parts of claims 2-4 above.

2. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Guerreri and further in view of Neyer.

Snider as modified above by Guerreri discloses the claimed invention in figure 5 and column 6 lines 64-68 and column 7 lines 1-14, that the means for explosive charge (14) is comprised of a shape charge with a solid explosive (101), which is initiated by an electric blasting cap (104). The electric blasting cap, which comprises an explosive bridge wire, is initiated with the application of an electric current, which is applied via a capacitor discharge-blasting machine (110) and initiating switch (105), to the explosive bridge wire. Guerreri does not illustrate that the explosive bridge wire is composed of an electrical circuit that is formed on a circuit board with an aperture and a portion of the electrical circuit overlying the aperture.

Neyer teaches in figures 2 and 3 and column 2 lines 38-46 and lines 65-69 and column 3 lines 1-3, lines 11-18, and lines 23-37, that a chip slapper (40) that is composed of a ceramic substrate (20) and contains a coating of a metal film, which is etched into the shape of spaced conductive lands (14) and (16) and bridge member (42), and is deposited with a flyer layer (20) of dielectric coating. The bridge member is a curved shape, typically a circle, and includes a cavity

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(44). When a current is applied to the chip slapper, via the conductive lands, the bridge member is vaporized and produces a circular shaped flying plate (48).

The circular shaped flying plate is produced by the cavity, which results in a shock wave focused to a higher pressure, due to the flying plate's ability of sticking to the substrate. The flying plate's ability to sticking to the substrate is due to the decrease in plasma driving the inner surface of the bridge member.

Snider and Neyer are analogous art because they both deal with the detonation of explosives.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Neyer's improved shaped bridge slapper in order to achieve a larger shock wave to detonate an explosive, by using less energy than is required for a conventional bridge slapper, as such is no more in than the use of common explosive bridge wire configurations known in the art.

NOTE: It is the vaporization of the bridge in Neyer that causes the detonation of the charge, regardless of the interim slapper mechanism.

Note also that statements as to possible future acts or to what the flash vaporization of the bridge causes is essentially a method limitation or statement of intended or desired use and do not serve to patentable distinguish the claimed structure over that of the reference. See *In re Pearson*, 181 USPQ; *In re Yanush*, 177 USPQ 705; *In re Finsterwalder*, 168 USPQ 530; *In re Casey*, 152 USPQ 235; *In re Otto*, 136 USPQ 458; *Ex parte Masham*, 2 USPQ 2nd 1647.

See MPEP 2114, which states:

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A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647

Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Dally, 120 USPQ 528, 531

Apparatus claims cover what a device is, not what a device does.
Hewlett-Packard Co. v Bausch & Lomb Inc., 15 USPQ2d 1525, 1528

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

3. Claims 8-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Abouav, and further in view of Guerreri for either the reasons set forth below or in the alternative further in view of U.S. Patent 5,295,544 to Umphries provided by applicant's IDS received 5/2/2005.

In regards to claim 8, Snider discloses a method for selectively perforating a tubular with a designated explosive charge located down hole in a well bore in claims 1 and 40:

*1. A process for establishing fluid communication comprising:
positioning (including connecting/attaching(see claim 40)) at least one explosive charge in a subterranean well bore such that said at least one explosive charge is placed external to casing which is also positioned within said well bore and is aimed toward said casing; and
detonating said at least one explosive charge so as to perforate the wall of said casing at least once.*

Although Snider discloses "Other suitable control system for igniting the explosive charge(s)...such as electromagnetic...and corresponding receivers (not

illustrated)...for wave transmissions" (See page 9), Snider does not expressly illustrate a detonating explosive charge having a wireless receiver, a microprocessor and control means connected to the wireless receiver, at least one explosive bridge wire, a high voltage supply means, an energy storage, a trigger means, and a method of transmitting a coded signal to an individual detonator assembly, in order to activate an individual detonator assembly among a plurality of detonator assemblies.

Abouav teaches in figure 1 and column 5 lines 45-56 and lines 62-68, that a quarry face (2) contains a number of well bores (4), which contain detonator assemblies (6) located in each well bore. The detonator assemblies are connected by conductors (10) to an antenna (11) for a radio transceiver (12) located in one or more of the assemblies. The radio transceiver receives control signals from a controller (14) via a transceiver (15) so that the detonator assemblies can be actuated by a wireless remote control. The detonator assemblies are synchronized to be activated at an establish time, after the controller has transmitted the signals for the blast to commence.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Abouav's method of activating the detonator assemblies in order to achieve the desired effect of activating the detonator assemblies in a precisely defined time sequence so that efficient use is made of the blasting materials, as such is no more in the use of common techniques and methods known in the art.

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Guerreri teaches, in the corresponding rejection of claim 1 above, a method of activating an individual detonator assembly among a plurality of detonator assemblies.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Guerreri's apparatus in order to achieve the benefits of a wireless system (i.e. no cost for wires, no management of wires, portability, etc.) as well as to achieve the desired effect of producing a blasting system, which is comprised of a plurality of detonator assemblies that are individually detonated by a wireless remote command source. It is noted again, that Snider clearly discloses any suitable control system may be used to ignite the explosive charges including electromagnetic wave transmissions (i.e. wireless).

Thus the Examiner has explained how the references read on applicant's invention as claimed except for SPECIFICALLY reciting that the explosive charge is in direct contact with the tubular.

It is noted that claim 1 of Snider recites:

"A process for establishing fluid communication comprising: positioning (including connecting/attaching(see claim 40)) at least one explosive charge in a subterranean well bore such that said at least one explosive charge is placed external to casing which is also positioned within said well bore and is aimed toward said casing; and detonating said at least one explosive charge so as to perforate the wall of said casing at least once."

and it is the examiners position that the phrase "positioning at least one explosive charge...external to casing...and is aimed toward said casing" is

generic to and reads on the explosive charge being directly connected with said tubing. Further although the examiner previously explained (for appellants benefit) that the tubular was item (12) in Figure 3, it is noted that Item (20) also reads on Appellants tubular, which would therefore read on appellants claimed limitation. However if appellant was still of the opinion that such is not so, then the examiner offered the following. (Reproduced from page 6, section 4 of the 8/10/2005 Final Office action.)

Umphries column 2, lines 29-32, and column 5, lines 1-21, teach it is old and advantageous for a perforating explosive charge to be in direct intimate contact with the pipe casing (or tubular) for the benefits of, for example controlling the force of perforation or perforating charges, punching of only one pipe casing or tubular, forming a defined hole without further damaging or causing fractures of the pipe casing, etc., etc. therefor at the time of the invention, it would have been obvious to one of ordinary skill in the art to attach the explosive charge of Snider to the tubular such that the explosive charge is in direct contact with the tubular as taught to be old and advantageous by Umphries.

In regards to claims 9-11, see rejections of corresponding parts of claims 2-4 above.

In regards to claim 12, see rejections of corresponding parts of claim 5 above.

In regards to claim 14, see rejections of corresponding parts of claim 7 above.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Snider in view of Abouav, further in view of Guerreri as applied to claim 8 above, and further in view of Neyer for either the reasons set forth or in the alternative further in view of U.S Patent 5,295,544 to Umphries provided by applicant's IDS received 5/2/2005 as applied to claim 8 above, and further in view of Neyer.

Snider in view of Abouav, and further in view of Guerreri discloses the claimed method above, but does not illustrate an electrical circuit, which is formed on a circuit board that contains an aperture, overlying the aperture in order to form an explosive bridge wire, that when energized by an application of power, will flash vaporize causing detonation of a nearby explosive charge.

Neyer teaches, in the corresponding rejection of claim 6 above, an electrical circuit that overlies an aperture of a circuit board in order to form an explosive bridge wire.

Snider and Neyer are analogous art because they both deal with detonating explosives.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Neyer's improved shaped bridge slapper in order to achieve a larger shock wave to detonate an explosive, by using less energy

than is required for a conventional bridge slapper as such is no more in than the use of common explosive bridge wire configurations known in the art.

NOTE: It is the vaporization of the bridge in Neyer that causes the detonation of the charge, regardless of the interim slapper mechanism.

Note also that statements as to possible future acts or to what the flash vaporization of the bridge causes is essentially a method limitation or statement of intended or desired use and do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 152 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP 2114, which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647

Claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531

Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v Bausch & Lomb Inc., 15 USPQ2d 1525, 1528

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

(10) Response to Argument

For the Boards convenience, the following responses are numbered in accordance with Appellant's Brief.

1. Rejection of claims 1-5 and 7 as unpatentable under 35 U.S.C. 103 is improper because there is no suggestion to combine the references and the references do not disclose all of the elements in the claims.

In response to appellant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In the instant case, the examiner has set forth multiple motivations to combine the references in section (11) 1. above (reproduced from section 4 of the 1/28/2005 office action). Additionally attention is directed to Snider page 11, lines 14-15 wherein it is clearly stated "the present invention...is capable of being remotely actuated by any suitable means such as...radio signals, etc" (underlining added) and column 1, lines 5-8 of Guerreri wherein it is clearly stated "This invention relates generally to devices and methods for remotely

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detonating one or more explosive charges.” (Underlining added) Clearly the knowledge generally available to one of ordinary skill in the art would allow for the use of Guerreri as the “suitable means” of remotely actuating the invention of Snider.

Additionally it is noted that Appellant has failed to provide any reasoning whatsoever as to why there is no suggestion to combine other than saying it isn’t so. Simply saying there is not sufficient suggestion to combine the references without any facts as to why, does not make it so, especially since the Examiner has clearly set forth multiple reasons to combine.

In response to Appellant’s argument that Snider and Guerreri is nonanalogous art, it has been held that a prior art reference must either be in the field of Appellant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the Appellant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In this case, not only are Snider and Guerreri considered analogous for the reasons set forth section (11) 1. above, but a review of the classification of both references shows that Snider is classified in class 166 and 175 and Guerreri is classified in class 102. A review of these class definitions clearly shows that both classes 166 and 175 are cross-referenced to class 102 and vice versa. Additionally Snider page 11, lines 14-15 clearly states “the present invention...is capable of being remotely actuated by any suitable means such as...radio

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signals, etc" (underlining added). Appellant is directed to column 1, lines 5-8 of Guerreri wherein it is clearly stated that "This invention relates generally to devices and methods for remotely detonating one or more explosive charges." Although Appellant argues Guerreri is related to "detonation of explosive charges using electrical detonators in environments having high levels of extraneous electricity" Guerreri is inherently capable of being used in ANY application requiring remote detonation of one or more explosive charges. Therefore, for the reasons set forth above, it is the examiners position that Snider and Guerreri are in fact analogous art..

Appellant's argues not all of the limitations are disclosed, i.e. that Guerreri does not disclose an explosive bridge wire. Attention is directed to Guerreri column 6, lines 57-63, and column 8, lines 27-28 and 47-48 wherein Guerreri claims "a plurality of explosive charges, each of said charges having an electrically activated detonator." Although the claims are read in light of the specification, limitations from the specification are not read into the claims as the claims must be interpreted in the broadest reasonable sense. Appellant's specification page 10, lines 13-15 disclose that a high voltage is supplied to explosive bridge wire 42 to trigger detonation of the respective charges. It is the examiners position that the phrase "electrically activated detonator" in Guerreri reads on Appellants exploding bridge wire detonator, since an exploding bridgewire detonator is electrically activated. Additionally it is noted that Guerreri clearly states that "the firing mechanism itself is of conventional type"

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(See column 6, line 57). If Appellant is of the opinion that an exploding wire detonator is not a conventional type of firing mechanism or electrically activated, then attention is directed to either column 1, lines 27-35 of U.S Patent 3,351,012 to Wilson or column 1, lines 8-15 of U.S. Patent 3,735,705 to Hudson, Jr. et al. wherein both references are only cited to show it is notoriously old and well known that explosive bridgewire initiators are indeed a conventional type of electrically activated firing mechanism commonly used for many years, hence it would have been obvious to utilize such. (Reproduced from pages 4-5, section 2 of the 8/10/2005 Final Office action)

2. The rejection of claim 6 as unpatentable under 35 U.S.C. §103(a) over Snider in view of Guerreri and further in view of Neyer is improper because there is no suggestion to combine the references

Appellant's arguments regarding motivation to combine the references have been fully addressed in section (10) 1. immediately above.

3. The rejection of claims 8-12 and 11-14 are unpatentable under 35 U.S.C. §103(a) over Snider in view of Abouav and further in view of Guerreri or in the alternative further in view of Umphries is improper because there is no suggestion to combine the references and the references do not disclose all of the elements in the claims

Appellant's arguments regarding motivation to combine the references have been fully addressed in section (10) 1. above.

Appellant's arguments regarding direct contact with the tubular was addressed in section 4 of the Final Office action mailed 8/10/2005, which has been reproduced in section (9) 3. above. Additionally, it is not seen wherein appellant even addresses the Umphries reference.

4. The rejection of claim 13 as unpatentable under 35 U.S.C. §103(a) over Snider in view of Abouav, further in view of Guerreri as applied to claim 8 above or in the alternative further in view of Umphries as applied to claim 8 above, and further in view of Neyer is improper because there is no suggestion to combine the references.

Appellant's arguments regarding motivation to combine the references have been fully addressed in section (10) 1. above.

Appellant's arguments regarding direct contact with the tubular was addressed in section 4 of the Final Office action mailed 8/10/2005, which has been reproduced in section (9) 3. above. Additionally, it is not seen wherein appellant even addresses the Umphries reference.


(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,



Daniel Lawson Greene Jr.

Conferees:

Michael Carone (SPE 3641) 

Stephen Johnson (3641) 



ELLA COLBERT
PRIMARY EXAMINER